



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Stephen A. Owens
Director

Assessment of Qualification for Treatment under the Arizona Natural and Exceptional Events Policy for the High Particulate (PM₁₀) Concentration Events in the Phoenix Area on August 23, 2007

Background

The Arizona Department of Environmental Quality (ADEQ) issues Dust Control Action Forecasts as part of the Natural Events Action Plan for the Phoenix area. Weather forecasts for August 23rd called for only a slight chance of monsoonal thunderstorms. Thus, on Tuesday, August 21, 2007, ADEQ air quality forecasters issued a Maricopa County Dust Control Action Forecast calling for only a low risk of wind-blown dust on Thursday, August 23rd for Maricopa County. The forecasts/advisories satisfy the requirement in 40 CFR 51.920(a)(1).

Despite the low risk for thunderstorms in Maricopa County on August 21st, wording in the Maricopa County Dust Control forecast stated that “during active summer monsoon episodes, outflows from even distant thunderstorms have the potential to cause periods of gusty winds and dense blowing dust.” Thus, a slight risk of exceeding the PM₁₀ National Ambient Air Quality Standards (NAAQS) in Maricopa County did exist. During the evening hours of August 23rd, a cluster of thunderstorm cells developed southeast of the Phoenix area. These cells moved to the northwest and created an outflow boundary, which reached the southeast valley during the evening. Winds in the Phoenix Metro area increased to around 20 mph and visibility was reduced at Sky Harbor Airport to 3 statute miles with blowing dust reported around 9:00 p.m.

All appropriate State Implementation Plan (SIP) control measures were in place during the event demonstrating, per 40 CFR 50.1(j), that the event “is not reasonably controllable or preventable.”

The initialization of the wind-blown dust event is evident in the Camelback and South Mountain visible camera images as well as the Arizona Meteorological Network (AzMET) and National Weather Service (NWS) monitors (see Fig. 1). Winds, while not particularly strong, did gust to around 20 mph at Phoenix Sky Harbor Airport allowing for dust to be suspended in the air. In addition, both Phoenix Sky Harbor Airport and Williams Gateway Airport observed reduced visibility and blowing dust and/or haze through much of the night, despite nearly calm winds after the outflow boundary passed. This supports the idea that the episode began as a wind-blown dust event and continued as a suspended dust event. This dust event brought elevated ambient concentrations of PM₁₀ to the Phoenix area that exceeded the NAAQS at the Higley monitor operated by Maricopa County. The fact that ambient concentrations exceed the NAAQS satisfies the criteria in 40 CFR 50.1(j) that the event “affects air quality.”

The following are the key PM₁₀ monitor readings for the monitors examined in this report:

Monitor (Operator/Type)	AQS ID*	24-hr Avg PM ₁₀	1-hr Max PM ₁₀	Max Time	Flag**
PHOENIX METRO AREA					
Higley (MC/TEOM)	04-013-4006	230	1865	2000	A or RJ
West 43 rd Ave (MC/TEOM)	04-013-4009	93	624	2000	None
Durango Complex (MC/TEOM)	04-013-9812	93	628	2000	None
Greenwood (MC/TEOM)	04-013-3010	84	654	2000	None
West Phoenix (MC/TEOM)	04-013-0019	73	453	2100	None
Central Phoenix (MC/TEOM)	04-013-3002	101	803	2000	None
JLG Supersite (ADEQ/TEOM)	04-013-9997	84	567	2100	None
Coyote Lakes (MC/TEOM)	04-013-4014	35	82	0700	None
South Phoenix (MC/TEOM)	04-013-4003	97	979	2000	None

* EPA Air Quality System Identification Number

** 24-hr PM₁₀ concentration influenced by natural or exceptional event to be flagged.

Type Abbreviations: TEOM – Tapered Element Oscillating Microbalance Monitor (Continuous monitor)

The preliminary findings from this analysis were presented at a stakeholders meeting on June 11, 2008. ADEQ has finalized this demonstration, which was made available for

public comment from August 11, 2008, through September 10, 2008. Any comments that were received were forwarded to EPA with this demonstration pursuant to 40 CFR 51.14(c)(3)(i).

SOUTHEAST PHOENIX

Hr	T(F)	RH	Rn	Spd	Max	Dir
1	88	44	-	1	4	E
2	87	42	-	3	6	E
3	84	53	-	7	10	SE
4	83	56	-	7	9	S
5	82	60	-	4	6	S
6	81	61	-	3	9	SE
7	85	54	-	3	6	SE
8	90	46	-	4	10	SE
9	92	44	-	7	11	SE
10	95	39	-	6	13	SE
11	97	35	-	5	11	SE
12	98	32	-	6	11	SE
1	100	30	-	5	11	SE
2	101	27	-	4	10	SE
3	103	25	-	4	11	SE
4	104	23	-	4	10	SE
5	104	25	-	4	11	NW
6	103	27	-	4	10	W
7	97	35	-	4	7	NW
8	95	34	-	2	21	W
9	93	36	-	7	17	SW
10	89	46	-	4	7	E
11	89	46	-	6	11	SE
12	85	54	-	2	4	SE

SKY HARBOR AIRPORT

Hr	T(F)	VR	Dust	Spd	Gust	Dir
1	96	10	13	14	14	W
2	94	10	10	10	10	NW
3	93	10	5	5	5	SW
4	91	10	3	3	3	SE
5	91	10	7	7	7	E
6	90	10	5	5	5	E
7	90	10	6	6	6	SE
8	93	10	7	7	7	S
9	96	10	13	20	20	S
10	98	10	9	9	9	SE
11	102	10	11	20	20	SE
12	102	10	5	5	5	VR
1	103	10	6	6	6	VR
2	104	10	3	3	3	VR
3	107	10	5	17	17	VR
4	107	10	0	0	0	-
5	106	10	3	3	3	VR
6	107	10	7	7	7	VR
7	105	10	8	8	8	W
8	104	10	6	6	6	W
9	99	3	BLDU	16	20	S
10	100	10	6	6	6	W
11	99	10	0	0	0	-
12	95	6	BLDU	7	7	SE

WILLIAMS GATEWAY AIRPORT

Hr	T(F)	VR	Dust	Spd	Gust	Dir
1	95	10	0	0	0	-
2	93	10	0	0	0	-
3	88	10	6	6	6	SE
4	84	10	6	6	6	SE
5	86	10	0	0	0	-
6	84	20	7	7	7	E
7	86	30	7	7	7	E
8	91	M	7	7	7	SE
9	95	30	6	6	6	SE
10	95	39	9	9	9	SE
11	M	M	M	M	M	-
12	100	30	7	7	7	S
1	100	30	6	6	6	W
2	102	30	6	6	6	VR
3	104	30	7	7	7	SW
4	104	30	7	7	7	SW
5	104	30	5	5	5	VR
6	104	30	6	6	6	W
7	102	30	6	6	6	SW
8	102	20	6	6	6	SW
9	95	3	HZ	8	8	W
10	95	4	HZ	6	6	NW
11	95	5	HZ	7	7	SE
12	90	5	HZ	7	7	SE

Event Contrib. Analysis

Hourly PM₁₀ Conc. (µg/m³)

MONITORS:	Hr	1
1-HIGLEY	1	42
	2	48
	3	53
	4	58
	5	74
	6	90
	7	89
	8	95
	9	80
	10	67
	11	53
	12	34
> NAAQS	< NAAQS	
Pink=Event Contrib.		
Conclusion: As shown above, the PM ₁₀ concentration would have been below the NAAQS "BUT FOR" the event contribution (hours highlighted in pink).		
	1	37
	2	31
	3	48
	4	38
	5	27
	6	26
	7	26
	8	74
	9	1865
	10	917
	11	1066
	12	595

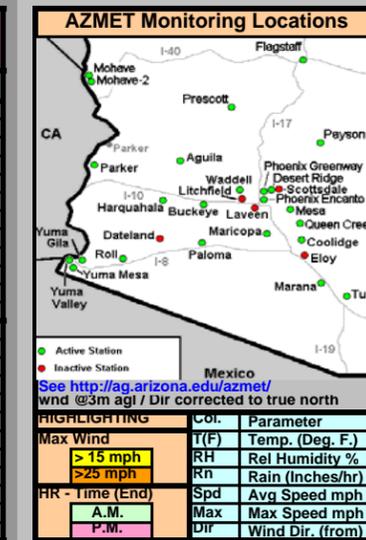
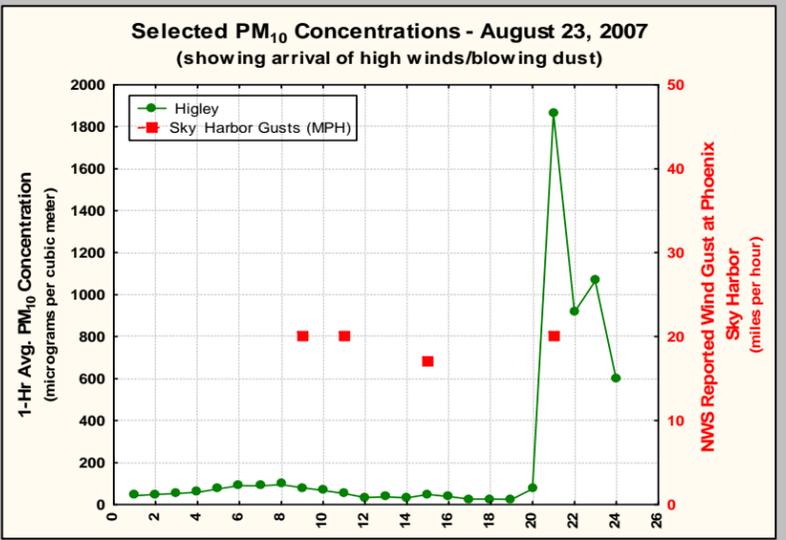


Figure 1. Key Data for Event of August 23, 2007

PHX WINDS	KEY	PM10 PLOT
CEN. AZ WINDS		SAT IMAGES
SO AZ WINDS		PHX VIS. CAMERAS

SUMMARY OF EVENT
During the 8:00 pm hour, winds picked up in portions of the valley, with a gust up to 20 mph at Sky Harbor Airport where there were also reports of blowing dust. At 10:00 pm, Phoenix and Williams Gateway had visibilities as low as 3 miles due to blowing and suspended dust.



COOLIDGE

Hr	T(F)	RH	Rn	Spd	Max	Dir
1	85	52	-	3	5	SW
2	85	54	-	2	6	SW
3	82	59	-	4	8	S
4	82	64	-	3	7	S
5	78	77	-	1	5	SW
6	79	74	-	3	5	SE
7	79	77	-	2	3	E
8	86	66	-	1	3	SE
9	91	54	-	2	7	S
10	93	54	-	2	6	E
11	96	45	-	1	5	E
12	98	38	-	2	10	S
1	98	43	-	3	12	SE
2	102	32	-	2	7	S
3	101	34	-	4	9	S
4	102	32	-	4	9	SW
5	101	35	-	3	8	N
6	100	46	-	2	4	E
7	96	45	-	2	4	SE
8	92	43	-	10	23	SW
9	89	42	-	7	14	W
10	87	47	-	5	12	E
11	85	56	-	3	7	S
12	83	62	-	2	5	SW

BUCKEYE

Hr	T(F)	RH	Rn	Spd	Max	Dir
1	87	45	-	5	10	SW
2	85	46	-	3	5	NW
3	84	45	-	2	5	N
4	83	47	-	2	4	NE
5	82	48	-	2	5	N
6	82	47	-	2	4	NE
7	82	51	-	2	5	E
8	87	49	-	3	5	E
9	91	47	-	2	4	SE
10	94	45	-	4	6	SE
11	97	34	-	2	5	SE
12	99	30	-	2	9	SE
1	100	29	-	4	10	SW
2	101	30	-	4	8	SE
3	104	27	-	3	8	SE
4	105	21	-	6	13	SW
5	105	21	-	6	12	SW
6	105	23	-	4	9	S
7	103	24	-	4	8	SW
8	98	27	-	2	5	SW
9	93	35	-	2	7	SW
10	93	36	-	5	9	SW
11	90	41	-	4	9	W
12	87	46	-	3	6	W

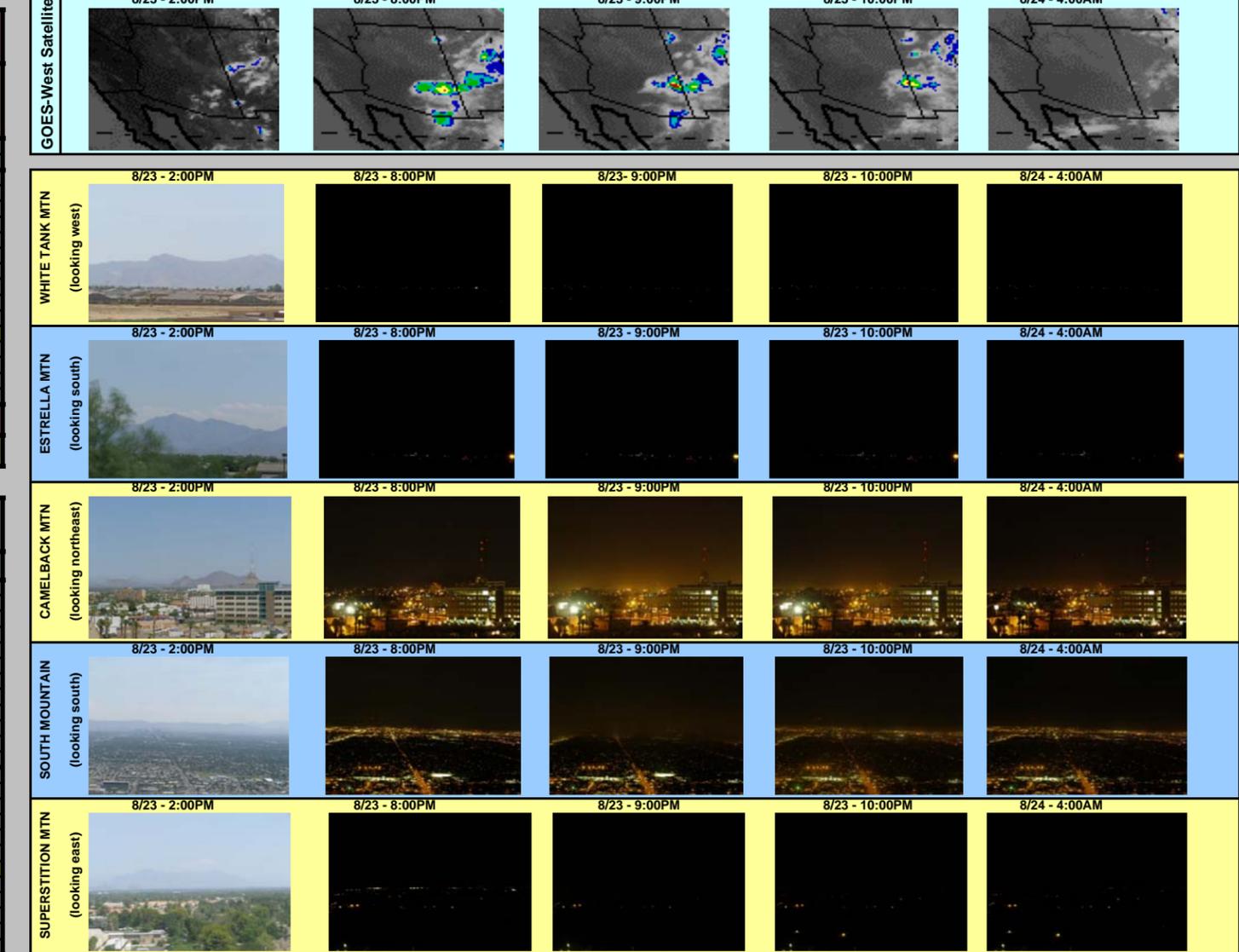
MARICOPA

Hr	T(F)	RH	Rn	Spd	Max	Dir
1	93	32	-	5	7	W
2	91	34	-	4	8	W
3	88	43	-	4	9	S
4	83	55	-	4	6	SE
5	84	53	-	3	6	S
6	83	53	-	4	6	S
7	86	53	-	7	11	S
8	89	51	-	9	12	S
9	92	45	-	10	14	S
10	95	40	-	9	14	S
11	98	35	-	5	11	S
12	100	31	-	4	9	S
1	102	28	-	5	11	SE
2	103	26	-	5	11	S
3	105	25	-	4	11	W
4	105	25	-	5	15	S
5	106	23	-	3	10	NW
6	104	27	-	3	7	NE
7	101	31	-	2	4	NE
8	92	41	-	15	32	S
9	91	39	-	7	19	SW
10	88	49	-	2	5	NE
11	85	54	-	4	8	SE
12	85	49	-	5	8	SE

Historical Distribution

5-Yr. Dist. of Values (µg/m³)

MONITORS:	Column Index
1-HIGLEY	Yr - All Data (5-Yrs)
	Sea - Data for Summer season only (5-Yrs)
Cum. Freq.	Mon 1
Min	3
0.5%	7
1.0%	8
2.5%	11
5%	16
10%	21
25%	33
50%	49
75%	71
90%	95
95%	114
97.5%	145
99.0%	175
99.5%	225
Max	493
Flagged Value	230
Conclusion: Flagged Value is exceptional in nature (eg. greater than 95% of all data)	



YUMA

Hr	T(F)	RH	Rn	Spd	Max	Dir
1	87	52	-	1	5	S
2	86	56	-	1	5	S
3	84	60	-	2	5	SE
4	84	61	-	4	8	S
5	84	64	-	6	9	SE
6	83	68	-	5	10	SE
7	83	69	-	8	11	SE
8	86	65	-	9	17	SE
9	89	58	-	12	16	SE
10	93	49	-	11	16	SE
11	96	41	-	8	14	S
12	98	34	-	7	15	S
1	101	30	-	7	14	S
2	103	26	-	8	16	S
3	106	23	-	9	17	S
4	108	19	-	8	16	S
5	109	17	-	9	17	S
6	108	16	-	9	13	SW
7	104	20	-	11	17	SW
8	97	26	-	7	13	SW
9	92	30	-	2	5	SW
10	90	32	-	1	3	S
11	88	34	-	0	2	E
12	85	39	-	2	4	E

PALOMA

Hr	T(F)	RH	Rn	Spd	Max	Dir
1	85	46	-	6	11	SW
2	85	47	-	2	7	NE
3	86	46	-	4	10	S
4	85	48	-	2	9	S
5	84	48	-	5	7	S
6	82	54	-	2	6	SW
7	80	66	-	1	3	NE
8	85	56	-	2	5	E
9	91	45	-	2	4	E
10	92	52	-	3	6	N
11	94	46	-	4	8	NW
12	96	46	-	5	8	N
1	99	39	-	4	6	N
2	100	39	-	4	7	N
3	102	36	-	4	7	N
4	104	30	-	5	12	NW
5	106	21	-	9	16	W
6	105	20	-	9	13	SW
7	101	26	-	6	11	SW
8	97	31	-	7	10	SW
9	95	33	-			

Assessment under the Technical Criteria Document (TCD)

1. Properly qualify and validate the air quality measurement to be flagged. As this was not a filter sampling date (1-in-6 run day), only data from the continuous analyzers were examined. The air quality monitoring data were reviewed by the agency responsible for operation of the monitor. All hourly PM₁₀ readings from the Higley monitoring site were valid for August 23rd. Audits of the analyzers revealed operations were within acceptable tolerance. No local sources were reported as significantly contributing to the air quality episode. Exceedances of the NAAQS were recorded at the Higley monitor operated by Maricopa County.

2. Review suspected contributing sources. The NWS and AzMET surface data for Arizona, along with the visible camera images in Phoenix, provide a good explanation as to what meteorological conditions were in place on August 23rd. Moderate wind gusts occurred in the Phoenix area at approximately 8:00 p.m. due to an outflow boundary from thunderstorms that developed east of the Phoenix Metro area during the evening hours of August 23rd. The plot of hourly PM₁₀ concentration data in the upper right corner of Figure 1 confirm the identical timing of elevated PM₁₀ concentrations at the Higley monitor with a wind gust at Sky Harbor Airport. Finally, reduced visibility and blowing dust / haze reports at the Sky Harbor and Williams Gateway airports were coincident with elevated PM₁₀ concentrations measured at Higley.

3. Examine all air quality monitoring information. Data from all monitors in the network were reviewed. Monitors from the affected areas are summarized in the table in the Background section of this assessment. While other monitors in the Phoenix area show spikes in PM₁₀ concentration occurring at the same time as that which occurred in Higley, none are high enough to cause additional NAAQS exceedances, and thus no further flags are being applied. Pursuant to 40 CFR 50.14(c)(3)(iii)(C), the "Historical Distribution" Table in Figure 1 has been included to demonstrate that the event is associated with a measured concentration in excess of normal historical fluctuations, including background (i.e., concentrations greater than the 95th percentile). The monitor with readings greater than that of the NAAQS on August 23rd which should be flagged is Higley.

4. Examine the meteorological conditions before and during the event. The AzMET meteorological data are summarized in Figure 1. The wind data are highlighted yellow if the max wind speed in the hour exceeds 15 mph

and orange if it exceeds 25 mph. As can be seen in figure 1, wind speeds did not pick up in the Phoenix area until the 7:00 and 8:00 p.m. hours, when a few stations reported gusty winds that were in the 20 mph range. This timing corresponds to the onset of elevated PM₁₀ concentrations recorded at the Higley site, which measured four hours of exceptionally high PM₁₀ concentrations as the outflow boundary and its wind-blown dust inundated portions of the Phoenix area.

5. Perform a qualitative attribution to emission source(s). All evidence indicates the elevated PM₁₀ concentrations in the Phoenix area can be attributed to soil emissions that were transported over portions of the Phoenix Metro area in Maricopa County. No source-specific emission allocation is possible based on the data available for analysis. The hourly concentration data do not show any significant source other than the wind-blown dust event occurring on August 23, 2007. Observational reports of blowing dust and/or haze from trained officials, along with reduced visibility through portions of the Phoenix area, are further proof that the elevated PM₁₀ concentrations were attributed to soil emissions transported due to wind gusts associated with a thunderstorm (see attachments). These reports, in addition to the visual evidence of reduced visibility seen at both South Mountain and Camelback Mountain in the lower right portion of Figure 1, provide proof that the elevated PM₁₀ concentrations in the Phoenix area can be attributed to soil emissions.

6. Estimation of Contribution from Source or Event. The primary source appears to be wind-blown dust over portions of Maricopa County for which there is not an effective or efficient method to estimate the relative contributions from specific sources. The demonstration analysis contained in this report establishes the linkage between the measurements to be flagged and the event, thus satisfying the requirement in 40 CFR 50.14(c)(3)(iii)(B). Pursuant to 40 CFR 50.14(c)(3)(iii)(D), the "Event Contrib. Analysis" Table in Figure 1 has been included to demonstrate that there would have been no exceedance or violation but for the event (i.e., the contribution during the event overwhelmed the 24-hour average).

7. Determination that a Natural or Exceptional Event Contributed To an Exceedance. Based on this analysis, the event satisfies the requirement in 40 CFR 50.1(j) that the elevated concentrations at the Higley monitoring site were attributed to a natural event.

Conclusion

Long-range transport of dust from soils. The elevated PM₁₀ event on August 23, 2007 in Maricopa County was the result of the transport of dust and soils from high winds that suspended natural soils and soils from areas where Best Available Control Measures are in place and should be flagged for air quality planning purposes. The "high wind"

flag (A or RJ) should be applied to the monitor readings indicated in the table at the beginning of this report, as the monitor would have been below the NAAQS but for the contribution of the event.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

**QUALITY CONTROLLED LOCAL
CLIMATOLOGICAL DATA
(final)
HOURLY OBSERVATIONS TABLE
PHOENIX SKY HARBOR INTL AIRPORT (23183)
PHOENIX , AZ
(08/2007)**

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: 1105 ft. above sea level
Latitude: 33.443
Longitude: -111.990
Data Version: VER3

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti-meter (in. hg)
						(F)	(C)	(F)	(C)	(F)	(C)											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
23	0051	11	CLR	10.00		96	35.6	72	22.2	60	15.6	30	14	280		28.50			AA		29.67	
23	0151	11	CLR	10.00		94	34.4	72	22.2	61	16.1	33	10	300		28.51			AA		29.68	
23	0251	11	CLR	10.00		93	33.9	72	22.0	61	16.1	34	5	210		28.53	1	006	AA		29.70	
23	0351	11	CLR	10.00		91	32.8	71	21.7	61	16.1	37	3	140		28.54			AA		29.71	
23	0451	11	CLR	10.00		91	32.8	72	22.0	62	16.7	38	7	100		28.54			AA		29.71	
23	0551	11	FEW130	10.00		90	32.2	72	22.1	63	17.2	41	5	110		28.56	1	012	AA		29.73	
23	0651	11	FEW130	10.00		90	32.2	72	22.1	63	17.2	41	6	120		28.57			AA		29.74	
23	0751	11	FEW150	10.00		93	33.9	73	22.9	64	17.8	38	7	160		28.58			AA		29.75	
23	0851	11	FEW150	10.00		96	35.6	75	24.0	66	18.9	37	13	180		28.58	1	012	AA		29.75	
23	0951	11	FEW070	10.00		98	36.7	75	23.9	65	18.3	34	9	140	20	28.58			AA		29.75	
23	1051	11	FEW085	10.00		102	38.9	75	23.9	63	17.2	28	11	150	20	28.57	8	004	AA		29.74	
23	1151	11	FEW090	10.00		102	38.9	74	23.1	60	15.6	25	5	VR		28.54			AA		29.71	
23	1251	11	FEW100	10.00		103	39.4	74	23.2	60	15.6	24	6	VR		28.52			AA		29.69	
23	1351	11	FEW110 SCT250	10.00		104	40.0	74	23.1	59	15.0	23	3	VR		28.50	6	022	AA		29.67	
23	1451	11	FEW110 SCT250	10.00		107	41.7	74	23.0	57	13.9	19	5	VR	17	28.46			AA		29.63	
23	1551	11	FEW110 SCT250	10.00		107	41.7	74	23.0	57	13.9	19	0	000		28.44			AA		29.61	
23	1651	11	FEW110 SCT250	10.00		106	41.1	73	22.9	57	13.9	20	3	VR		28.42	6	025	AA		29.59	
23	1751	11	FEW110 SCT250	10.00		107	41.7	74	23.0	57	13.9	19	7	VR		28.42			AA		29.59	
23	1851	11	FEW110 SCT250	10.00		105	40.6	73	22.7	57	13.9	21	8	270		28.42			AA		29.59	
23	1951	11	FEW110 SCT250	10.00	BLDU	104	40.0	73	22.8	58	14.4	22	6	270	20	28.46	3	011	AA		29.63	
23	2035	11	SCT001 BKN110 BKN250	2.50	BLDU	99	37.0	74	23.5	63	17.0	31	16	170		28.48			M	SP	29.65	
23	2046	11	FEW006 SCT110 SCT250	3.00	BLDU	99	37.0	74	23.5	63	17.0	31	7	180		28.48			M	SP	29.65	
23	2051	11	FEW006 SCT110 SCT250	4.00		99	37.2	74	23.2	62	16.7	30	8	170		28.48			AA		29.65	
23	2151	11	FEW110 SCT250	10.00	BLDU	100	37.8	74	23.1	61	16.1	28	6	260		28.48	5	000	AA		29.65	
23	2251	11	FEW250	10.00		99	37.2	73	22.9	61	16.1	29	0	000		28.48			AA		29.65	
23	2351	11	FEW250	6.00		95	35.0	74	23.2	64	17.8	36	7	140		28.51			AA		29.68	

Dynamically generated Fri Mar 28 17:24:39 EDT 2008 via <http://cdo.ncdc.noaa.gov/qclcd/QCLCD>

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

**QUALITY CONTROLLED LOCAL
CLIMATOLOGICAL DATA
(final)
HOURLY OBSERVATIONS TABLE
WILLIAMS GATEWAY AIRPORT (23104)
PHOENIX , AZ
(08/2007)**

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: 1382 ft. above sea level
Latitude: 33.308
Longitude: -111.650
Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti-meter (in. hg)
						(F)	(C)	(F)	(C)	(F)	(C)											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
23	0056	0	OVC085	10.00		95	35.0	70	21.2	57	14.0	28	0	000		28.26			M	AA		29.72
23	0156	0	BKN085	10.00		93	34.0	71	21.4	59	15.0	32	0	000		28.27			M	AA		29.73
23	0255	0	BKN085 OVC110	10.00		88	31.0	69	20.6	59	15.0	38	6	130		28.29			M	AA		29.75
23	0358	0	BKN100	10.00		84	29.0	70	21.2	63	17.0	49	6	140		28.30			M	AA		29.76
23	0457	0	SCT090 BKN100	10.00		86	30.0	71	21.5	63	17.0	46	0	000		28.30			M	AA		29.76
23	0547	0	SCT150 SCT250	20.00		84	29.0	70	21.2	63	17.0	49	7	080		28.31			M	AA		29.77
23	0647	0	FEW080 SCT150 SCT200	30.00		86	30.0	71	21.5	63	17.0	46	7	100		28.32			M	AA		29.78
23	0751	0	FEW150 SCT250	M		91	33.0	73	22.6	64	18.0	41	7	120		28.33			M	AA		29.79
23	0847	0	FEW120	30.00		95	35.0	74	23.2	64	18.0	36	6	140		28.33			M	AA		29.79
23	0947	0	FEW120	39.00		95	35.0	74	23.2	64	18.0	36	9	140		28.33			M	AA		29.79
23	1147	0	FEW080	30.00		100	38.0	75	23.6	63	17.0	30	7	190		28.30			M	AA		29.76
23	1247	0	FEW080	30.00		100	38.0	73	22.5	59	15.0	26	6	280		28.28			M	AA		29.74
23	1347	0	SCT100 SCT250	30.00		102	39.0	73	22.8	59	15.0	24	6	VR		28.26			M	AA		29.72
23	1447	0	SCT100 SCT250	30.00		104	40.0	74	23.1	59	15.0	23	7	240		28.22			M	AA		29.68
23	1547	0	SCT100 SCT250	30.00		104	40.0	74	23.1	59	15.0	23	7	240		28.21			M	AA		29.66
23	1647	0	SCT100 SCT250	30.00		104	40.0	74	23.1	59	15.0	23	5	VR		28.19			M	AA		29.64
23	1747	0	SCT100 SCT250	30.00		104	40.0	72	22.1	55	13.0	20	6	270		28.19			M	AA		29.64
23	1847	0	SCT100 SCT250	30.00		102	39.0	71	21.8	55	13.0	21	6	230		28.19			M	AA		29.64
23	1947	0	SCT100 BKN250	20.00	HZ	102	39.0	72	22.3	57	14.0	23	6	240		28.22			M	AA		29.67
23	2057	0	OVC006	3.00	HZ	95	35.0	74	23.2	64	18.0	36	8	250		28.23			M	AA		29.69
23	2138	0	SCT055	4.00	HZ	95	35.0	74	23.2	64	18.0	36	6	310		28.25			M	AA		29.70
23	2236	0	CLR	5.00	HZ	95	35.0	74	23.2	64	18.0	36	7	140		28.25			M	AA		29.71
23	2355	0	SCT060	5.00		90	32.0	72	22.1	63	17.0	41	7	120		28.26			M	AA		29.72

Dynamically generated Fri Mar 28 17:22:37 EDT 2008 via <http://cdo.ncdc.noaa.gov/qclcd/QCLCD>